

Section 3-6: Graphing Inequalities on a Number Line

By the end of this lesson, you should be able to answer:

- How do you determine if a number is a solution of an inequality?
- How do you graph the solution of an inequality on a number line?

Where you might see this in the real world:

- Business, government, sports, physics, geography

Define the following terms:

1. Inequality
2. True inequality
3. False inequality
4. Open inequality
5. Solution of the inequality

Complete the opening activity on page 126 in the space below.

- 1.
- 2.
- 3.
- 4.

When we are dealing with inequalities, we are dealing with a series of possible symbols:

There are word phrases that can go along with each of these signs. Match the sign to each phrase:

"At least"

"At most"

"Greater than"

"Less than"

"Maximum"

"Minimum"

Example 1: Name all of the inequalities chosen from A-F for which 1 is a solution.

A. $x \leq 1$

B. $x < 1$

C. $-2 < x < 2$

D. $-2 < x < 1$

E. $-2 < x \leq 1$

F. $-\frac{1}{2} \leq x \leq \frac{1}{2}$

Example 2: Graph the solution of each inequality on a number line.

a. $x < -2$ or $x \geq 3$

b. $x \geq -3$ and $x < 2$

Example 3: By the order of the fire commissioner, the capacity of a local theatre is not to exceed 225 people.

a. Write an inequality that describes the capacity of the theatre.

b. Graph the solution of the inequality on a number line.

Homework:

"I MAY NOT HAVE GONE WHERE I INTENDED TO GO, BUT I THINK I HAVE ENDED UP WHERE I NEEDED TO BE." - DOUGLAS ADAMS